Status of the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Previously Presented)   A method comprising:

applying a voltage having a voltage value to pixels in a spatial light modulator (SLM) to move the pixels;

reflecting light from the moved pixels;

passing the reflected light through an apodized pupil in an optical system;

using a semi-plane knife-edge to block, from one side, a zero order lobe of a pixel diffraction pattern at the apodized pupil;

capturing an image from the light after it passes through the apodized pupil;

correlating the image and the voltage value to generate a result signal; and

calibrating the pixels using the result signal.

2. (Original)   The method of claim 1, further comprising individually resolving each of the pixels using the apodized pupil.

3. (Previously Presented)   The method of claim 1, further comprising using a charge coupled device (CCD) array to perform the capturing step.

4. (Canceled)

5. (Original)   The method of claim 3, wherein the image of each of the pixels is captured using more than one cell in the CCD array.

6. (Original)   The method of claim 1, further comprising:

tilting the pixel through a plurality of desired angles; and

performing the capturing step for each of the desired angles.

7. (Previously Presented)   The method of claim 1, further comprising:

    tilting the pixel through a set of angles;

    performing the capturing step at each angle in the set of angles; and

    using interpolation to determine a voltage value that moves the pixel to an angle outside the set of angles.

8. (Canceled)

9. (Previously Presented)   The method of claim 1, further comprising forming the apodized pupil using one of an annular and a semi-circular pattern.

10. (Original) The method of claim 1, further comprising forming the apodized pupil using one of a semi-plane, a shearing grating, and an algorithm derived apodization pattern, such that variations are present in at least one of transmittance and phase.

11-12 (Canceled)

13. (Previously Presented)   The system of claim 24, wherein the detector comprises a charge coupled device (CCD) array.

14. (Canceled)

15. (Original) The system of claim 13, wherein an image of each of the pixels is measured using more than one cell in the CCD array.

16-17 (Canceled)

18. (Previously Presented)   The system of claim 24, further comprising one of a shearing grating, an algorithm derived apodization pattern, an annular pattern, and a semi-circular pattern to apodize the pupil, such that variations are present in at least one of transmittance and phase.

19. (Previously Presented)   The system of claim 24, wherein:

the voltage moves each of the pixels through a plurality of desired angles; and

the correlating device determines a first result signal for each of the desired angles.

20. (Previously Presented)   The system of claim 19, wherein:

the detector captures an image at each angle in the plurality of desired angles; and

the correlating device uses interpolation to determine a second result signal for angles falling outside the plurality of desired angles.

21. (Previously Presented)   The system of claim 24, wherein the optical system comprises projection optics of a lithography tool.

22. (Previously Presented)   The method of claim 1, wherein the image of each of the pixels is captured using one cell in a CCD array.

23. (Previously Presented)   The system of claim 13, wherein the image of each of the pixels is captured using one cell in a CCD array.

24. (Previously Presented)   A system comprising:

a voltage value storage configured to transmit a voltage having a voltage value to pixels in a spatial light modulator (SLM) to move the pixels;

a semi-plane knife edge device configured to apodize a pupil in an optical system, wherein the semi-plane knife edge device blocks, from one side, a zero order lobe of a pixel diffraction pattern at the apodized pupil;

a detector configured to capture an image from light that has reflected off the SLM and passed through the semi-plane knife edge device;

a correlating device configured to correlate the image and the voltage value to generate a result signal; and

a controller configured to calibrate the pixels using the result signal.